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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/769,901 | 01/26/2001 | Victor R. Stefanovic | 199-1308 | 4993 |

7590 03/27/2002
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EXAMINER

GONZALEZ, JULIO C

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2834

DATE MAILED: 03/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/769,901

Applicant(s)

STEFANOVIC ET AL.

Examiner

Julio C. Gonzalez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

- ✓ 1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, generator, the plurality of current sensors in the generator, the inverter connected to the generator, a plurality of voltage sensors, the voltage regulator as disclosed in claim 1 and the generator shaft as disclosed in claim 5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 discloses a d-axis voltage to reduce a flux error and a q-axis voltage to reduce the torque error. What is the relationship between the q-axis voltage and the torque of the generator? Does the "d-axis" and "q-axis" have a special meaning with respect to the voltages?

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Claim 5 discloses obtaining a torque amount by a mapping function. What is meant by a "mapping function"? Is it a control function? A mathematical function? What is the function mapping?

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 11, 13-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seibel et al (Patent # 6,014,007) in view of Heikkila.

Seibel discloses current sensors, voltage sensors (column 10, lines 30, 39, 40) , a reference frame 21, flux regulator 22, voltage regulator 24, a two-phase system (see figure 3), and an inverter 14. Also, the flux is calculated and a flux error is obtained (see claim 19). Moreover, a voltage error is calculated, d-axis, q-axis voltage is produced (see abstract & column 15, line 57).

Seibel discloses inherently that the controlling method can be used for a generator since it is well known in the art that motors and generators have similar features and structures.

However, Seibel does not disclose using a torque error.

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On the other hand, Heikkila discloses for the purpose of reducing torque ripple and noise, a direct torque control using a torque controller T_c (see figure 5), which is involved in the torque error (column 10, lines 40-44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a controller as disclosed by Seibel et al and to modify the invention by using a torque error for the purpose of reducing torque ripple and noise as disclosed by Heikkila.

5. Claims 5-10, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seibel et al (Patent # 6,014,007) and Heikkila as applied to claims 1, 11 and 16 above, and further in view of Seibel et al (Patent # 5,717,305).

The combined control invention includes all of the elements above.

However, the combined control invention does not disclose a generator shaft torque.

On the other hand, Seibel (Patent # 5,717,305) discloses for the purpose of achieving proper torque during the starting and maintaining stability for the system that the generator has a torque amount that is controlled (see abstract & claim 8)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined control invention and to use a generator torque for the purpose of achieving proper torque during the starting and maintaining stability for the system as disclosed by Seibel.

Conclusion

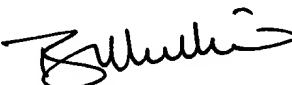
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Jcg

March 21, 2002


BURTON S. MULLINS
PRIMARY EXAMINER